

Images in Medicine

Reticular epithelial corneal oedema secondary to topical netarsudil drops

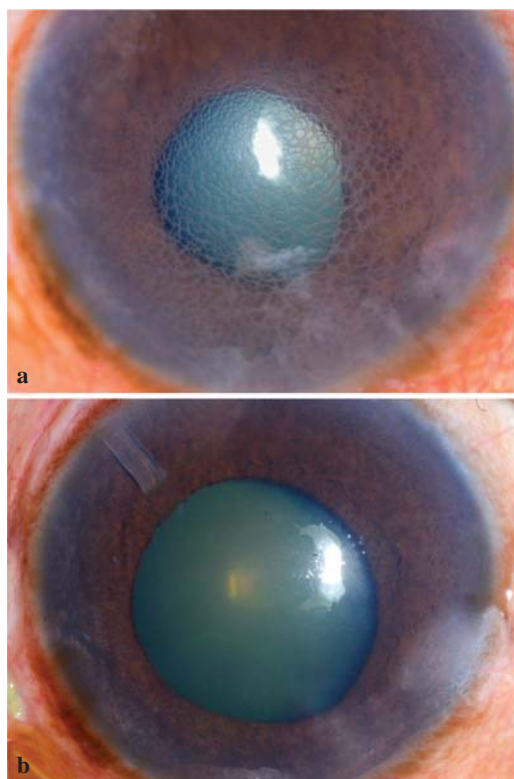


FIG 1. Diffuse illumination slit-lamp images of the right eye of the patient: (a) showing diffuse limbus to limbus bullous reticular epithelial oedema; (b) complete resolution of oedema after stopping topical 0.02% netarsudil drops. The tube of the valved glaucoma drainage implant is in the superior quadrant

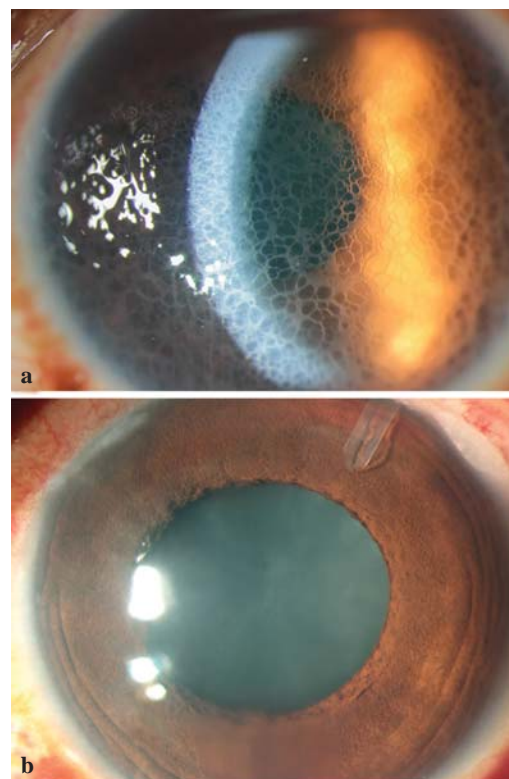


FIG 2. Slit-lamp images of the left eye of the patient: (a) direct focal illumination showing diffuse limbus to limbus bullous reticular epithelial oedema; (b) complete resolution of oedema after stopping topical 0.02% netarsudil drops. The tube of the valved glaucoma drainage implant is the superior quadrant

A 40-year-old man presented with painless visual loss in his right eye for 10 days before presentation. His best-correctable visual acuity (BCVA) was 20/240 in the right eye and 20/20 in the left eye. His intraocular pressures (IOP) were 20 and 12 mmHg, respectively. Ocular examination of the right eye showed diffuse limbus-to-limbus bullous reticular epithelial corneal oedema (RECE, Fig. 1a) and a normal posterior segment. Left eye examination was normal. He was using multiple anti-glaucoma medications for traumatic glaucoma and had started using topical 0.02% netarsudil drops 3 weeks ago. Netarsudil drops were immediately stopped. One week later, corneal oedema cleared completely and BCVA improved to 20/80. Subsequently, he underwent valved glaucoma drainage implantation (Fig. 1b).

A 20-year-old man presented with painless visual loss in his right eye for 3 days before presentation. His BCVA was 20/120 in the right eye and 20/20 in the left eye. His IOPs were 24 and 14 mmHg, respectively. Ocular examination of the right eye showed diffuse limbus-to-limbus bullous RECE (Fig. 2a) and a normal posterior segment. Left eye examination was normal. He was using multiple anti-glaucoma medications for traumatic glaucoma and had started using topical netarsudil drops 1 week ago. Netarsudil drops were immediately stopped. Two days later, corneal oedema cleared completely and BCVA improved to 20/40. Subsequently, he underwent valved glaucoma drainage implantation (Fig. 2b).

RECE is a rare complication of the recently approved topical netarsudil drops. The predisposing risk factors include Fuch's endothelial dystrophy; history of penetrating or lamellar keratoplasty, or glaucoma drainage implantation; pre-existing corneal oedema or decompensation; congenital glaucoma; and old age.¹⁻⁵ However, both our patients had no such risk factors.

RECE is associated with a normal IOP and variable-sized cysts forming a typical honeycomb pattern; while oedema secondary to raised IOP is associated with small uniform-sized epithelial cysts, underlying stromal haze and a raised IOP.

Conflicts of interest. None declared

REFERENCES

- 1 Wisely CE, Liu KC, Gupta D, Carlson AN, Asrani SG, Kim T. Reticular bullous epithelial edema in corneas treated with netarsudil: A case series. *Am J Ophthalmol* 2020;**217**:20–6.
- 2 Bhargava M, Sen S, Bhambhani V, Paul RS, Dutta C. Reticular epithelial corneal edema as a novel side-effect of Rho kinase inhibitors: An Indian scenario. *Indian J Ophthalmol* 2022;**70**:1163–70.
- 3 Fernandez MM. Reticular epithelial edema in edematous corneas treated with netarsudil. *Ophthalmology* 2018;**125**:1709.
- 4 LoBue SA, Moustafa GA, Vu A, Amin M, Nguyen T, Goyal H. Transient reticular cystic corneal epithelial edema with topical netarsudil: A case series and review. *Cornea* 2021;**40**:1048–54.
- 5 Chen H, McMillin JC, Frankfort BJ, Al-Mohtaseb Z. Reticular epithelial edema: An uncommon side effect of ROCK/NET inhibitor netarsudil. *J Glaucoma* 2020;**29**:e124–6.

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Puzzling papular eruptions on an old scar

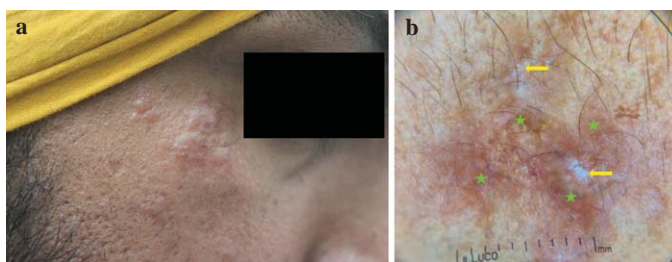


FIG 1. (a) Unilateral involvement of the right upper malar area in the form of skin-coloured grouped papules; (b) dermoscopy shows white areas of stellate and linear scarring (yellow arrows) on the background of brown to erythematous homogeneous areas (green stars) (IDS-1100, $\times 10$)

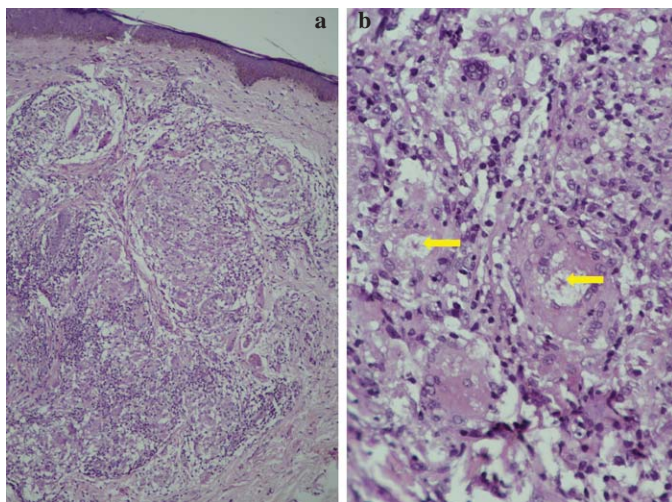


FIG 2. (a) Biopsy shows thin epidermis with flattening of rete-ridges. The underlying dermis is packed with many non-necrotizing granulomas (H&E, $20\times$); (b) these granulomas are composed of epithelioid histiocytes with minimal lymphocytic cuffing. Some of the granulomas also show asteroid bodies (yellow arrows; H&E, $40\times$)